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# Cherenkov Light Identification at Coherent Captain-Mills Experiment

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The Coherent CAPTAIN-Mills (CCM) experiment is a 10 ton liquid argon scintillation detector located at Los Alamos National Lab studying neutrino and beyond Standard Model physics. The detector is located 23m downstream from the Lujan Facility's stopped pion source which will receive 2.25 x 10ˆ22 POT in the ongoing 3 year run cycle. CCM is instrumented with 200 8-inch PMTs, 80% of which are coated in wavelength shifting tetraphenyl-butadiene, and 40 optically isolated 1-inch veto PMTs. The combination of PMTs coated in wavelength shifter and uncoated PMTs allows CCM to resolve both scintillation and Cherenkov light. Argon scintillation light peaks at 128nm, which requires the use of wavelength shifters into the visible spectrum for detection by the PMTs. The uncoated PMTs, however, will be more sensitive to the broad-spectrum Cherenkov light and less sensitive to the UV scintillation light produced in argon. This combination of coated and uncoated PMTs, along with our 2 nsec timing resolution, enables event by event identification of Cherenkov light. This event-by-event identification of Cherenkov light is a powerful tool in rejecting neutron backgrounds – enabling improved sensitivities to dark sector and beyond Standard Model physics searches.

## Mini Symposia (Invited Talks Only)

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